

*Picea glauca - Abies balsamea - Populus tremuloides / Mixed Herbs Forest
(Spruce - Fir - Aspen Forest)*

COMMON NAME	White Spruce - Balsam Fir - Trembling Aspen / Mixed Herbs Forest
SYNONYM	Spruce - Fir - Aspen Forest
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Mixed evergreen-deciduous forest (I.C)
PHYSIOGNOMIC GROUP	Mixed needle-leaved evergreen - cold-deciduous forest (I.C.3)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.C.3.N)
FORMATION	Mixed needle-leaved evergreen - cold-deciduous forest (I.C.3.N.a)
ALLIANCE	PICEA GLAUCA - ABIES BALSAMEA - POPULUS SPP. FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

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This type is common throughout the park.

Globally

This community is found in northern Michigan, northern Wisconsin, northern Minnesota, northwestern Ontario, and southeastern Manitoba.

ENVIRONMENTAL DESCRIPTION

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This community almost always occurs on gentle slopes (0 - 10%) with variable aspects. Bedrock and coarse surficial rocks are common. A large amount of coarse woody debris is common. Soils are usually rocky, shallow sandy loams or silt loams. Typical depth is 5-8 cm though there may be areas with soils up to 20- 30 cm deep.

Globally

This upland community is found on deep, well drained to rapidly drained, moist, fine-textured, mineral soils. Loams are the most common, but silts and clays are not rare (Sims *et al.* 1989, Zoladeski *et al.* 1995).

MOST ABUNDANT SPECIES

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Stratum

Tree canopy

Forb

Fern

Species

Picea glauca, *Abies balsamea*, *Populus tremuloides*, *Betula papyrifera*

Aster macrophyllus, *Aralia nudicaulis*

Pteridium aquilinum

Globally

Stratum

Tree canopy

Forb

Species

Picea glauca, *Populus tremuloides*, *Betula papyrifera*

Aster macrophyllus, *Aralia nudicaulis*

CHARACTERISTIC SPECIES

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Picea glauca, *Abies balsamea*, *Populus tremuloides*, *Betula papyrifera*, *Diervilla lonicera*, *Aster macrophyllus*, *Aralia nudicaulis*, *Pteridium aquilinum*, *Cornus canadensis*, *Calamagrostis canadensis*

Globally

Picea glauca, *Abies balsamea*, *Populus tremuloides*, *Betula papyrifera*, *Diervilla lonicera*, *Aster macrophyllus*, *Aralia nudicaulis*, *Pteridium aquilinum*, *Cornus canadensis*, *Calamagrostis canadensis*

VEGETATION DESCRIPTION

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The canopy in this type is a dominated by a mix of *Populus tremuloides*, *Betula papyrifera*, *Picea glauca*, and *Abies*

USGS-NPS Vegetation Mapping Program
Voyageurs National Park

balsamea. Both the deciduous and evergreen components comprise at least 25% of the canopy. Though much variation exists, there tends to be a ratio of 60:40 deciduous : evergreen trees in the canopy. Canopy cover in this community is usually 70-90% with canopy trees ranging from 10-20 m tall. The subcanopy is usually absent, but if present consists of a low (20%) cover of *Abies balsamea* or *Acer rubrum*. This community characteristically contains large gaps in the canopy allowing for a significant shrub layers. Though these layers can reach 90%, they most commonly are in the 40-70% cover range and consist of *Abies balsamea*, *Acer rubrum*, and *Corylus cornuta*. The short shrubs *Vaccinium angustifolium* and *Vaccinium myrtilloides* can be absent or present with less than 20% cover. There is generally a fairly low species diversity in the herbaceous strata and cover is typically from 70-80% but can be as low as 30%. The most abundant species are *Pteridium aquilinum*, *Aster macrophyllus*, *Aralia nudicaulis*, and *Cornus canadensis*.

Globally

The canopy in this type is dominated by a mix of *Populus tremuloides*, *Betula papyrifera*, *Picea glauca*, and *Abies balsamea*. Both the deciduous and evergreen components comprise at least 25% of the canopy. Canopy cover in this community is usually 70-90% with canopy trees ranging from 10-20 m tall. The overstory composition is varied. The most abundant tree species typically are *Abies balsamea*, *Acer rubrum*, *Picea glauca*, *Pinus strobus*, *Populus tremuloides*, and *Populus balsamifera*. The subcanopy is usually absent, but if present consists of a low (20%) cover of *Abies balsamea*. The sapling/shrub layer is usually moderately well developed. *Acer spicatum*, *Corylus cornuta*, *Rosa acicularis*, *Rubus pubescens*, and saplings of *Abies balsamea* are the most commonly encountered in this stratum. Herb diversity is usually high. *Aralia nudicaulis*, *Aster ciliolatus*, *Aster macrophyllus*, *Clintonia borealis*, *Cornus canadensis*, *Galium triflorum*, *Maianthemum canadense*, *Mitella nuda*, and *Trientalis borealis* are typical of this community.

CONSERVATION RANK G5.

DATABASE CODE Cegl002475

COMMENTS

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Diagnostic features of the type include the mixed canopy of *Populus tremuloides*, *Betula papyrifera*, *Picea glauca*, and *Abies balsamea*. Both evergreen and deciduous components comprising at least 25% relative cover. When canopy cover of the evergreen component of this type falls to near 25%, this type can grade into the Aspen-Birch-Boreal Conifer Forest. In stands where the dominant evergreen is *Picea mariana*, the stand is considered a Black Spruce-Aspen Forest (CEGL002516), but that type is rare in the park. In stands that border beaver ponds, selective beaver cutting of aspen and birch trees may cause these types to shift to Spruce-Fir/Mountain Maple Forests (CEGL002446) or Boreal Hazelnut-Serviceberry Rocky Shrubland (CEGL005197).

Many of the *Abies balsamea* trees and shrubs in these communities are dying from Spruce Budworm infestations.

REFERENCES

- Sims, R. A., W. D. Towill, K. A. Baldwin, and G. M. Wickware. 1989. Field guide to the forest ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources.
- Zoladeski, C. A., G. M. Wickware, R. J. Delorme, R. A. Sims, and I. G. W. Corns. 1995. Forest ecosystem classification for Manitoba: field guide. Natural Resources Canada, Canadian Forest Service, Northwest Region, Northern Forestry Center, Edmonton, Alberta. Special Report 2.